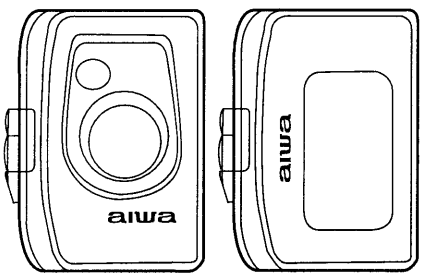
aiwa

aiwa SERVICE

HS-GS252
HS-GS352
HS-PS251

SERVICE MANUAL



HS-GS252 HS-GS352 HS-PS251

STEREO CASSETTE PLAYER

• BASIC TAPE MECHANISM : 3 ZM-1 P2

• TYPE: Y,YJ,Y1G (GS252)
Y,YJ (GS352/PS251)

SPECIFICATIONS

Maximum output :	20 mW + 20 mW (EIAJ/16 Ω) 15 mW + 15mW (EIAJ/32 Ω)
Power source :	Battery DC 3V,R6 (size AA) x2 Domestic AC power (using optional AC adaptor : Aiwa AC-620/AC-300)
Battery life :	Using manganese batteries, R6P (size AA) Approx.5 hours (HS-GS252/HS-PS251) Approx.4.5 hours (HS-GS352) Using alkaline batteries,LR6 (size AA) Approx.13.5 hours (HS-GS252/HS-PS251) Approx.13 hours (HS-GS352)
Maximum dimensions (W x H x D) :	88.5 x 113.3 x 36.3 mm (HS-GS252) 88.5 x 113.3 x 35.7 mm (HS-GS352/HS-PS251) ($3^1/_2$ x $4^1/_2$ x $1^7/_{16}$ in.)
Weight : (excluding batteries)	Approx. 132 g (0.3lbs) (HS-GS352/HS-GS252) Approx. 130 g (0.3lbs) (HS-PS251)

• Design and specifications are subject to change without notice.

• Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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S/M Code No. 09-956-106-6FP

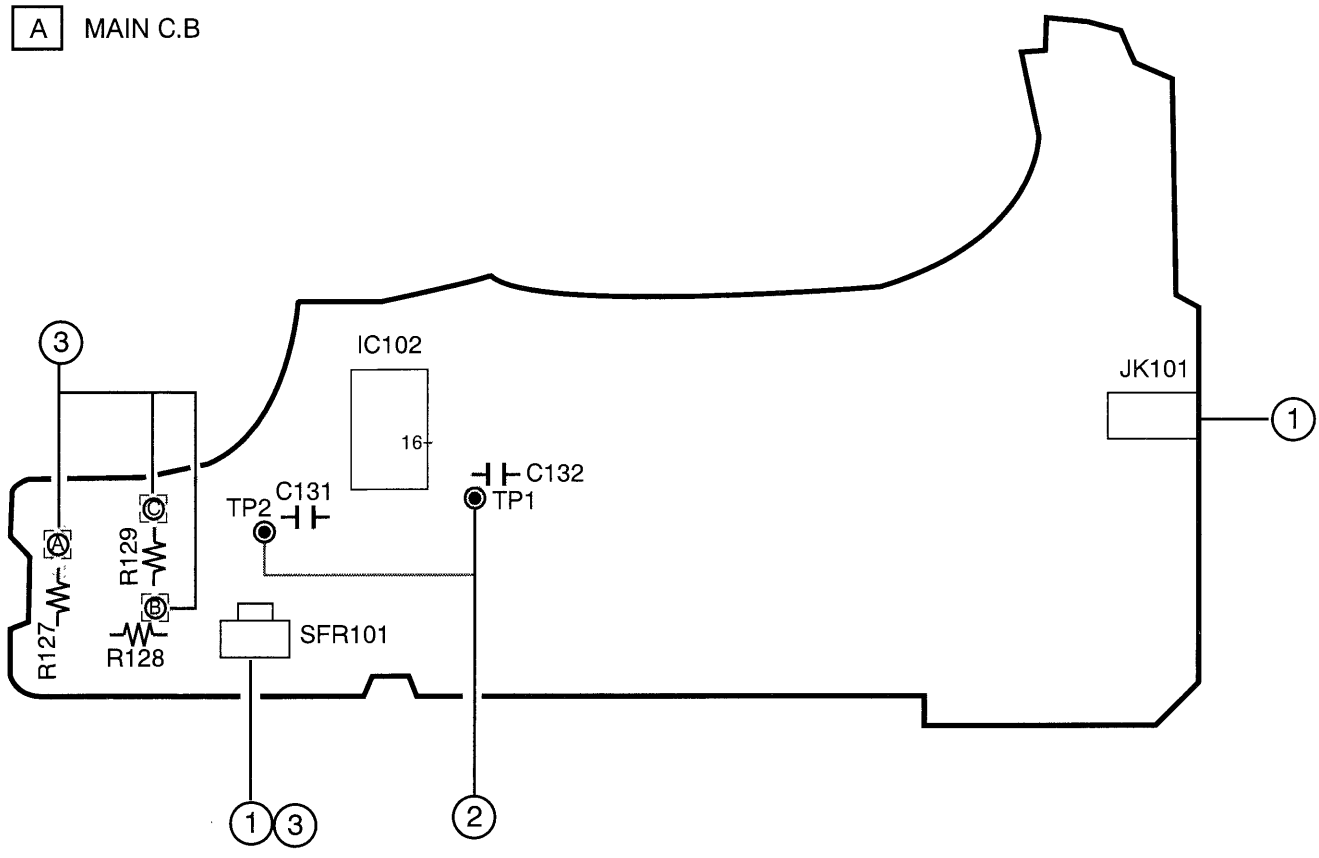
ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-070-248-049		IC,MM1104BFFK<GS352>
	87-001-934-089		IC,BA1106F<GS352>
	87-017-643-089		IC,MM1206XFF<GS352>
	87-070-161-040		IC,MM1104AFFK<EXCEPT GS352>
	87-017-906-080		IC,MM1206AFFE<GS252>
TRANSISTOR			
	89-327-125-089		C-TR,2SC2712GR<EXCEPT YJ,PS251>
	87-026-264-089		C-TR,RN1411<GS252>
DIODE			
	87-020-339-089		C-DIODE,1SS226<EXCEPT YJ,PS251>
	87-020-027-089		C-DIODE,1SS184<GS252>
MAIN C.B			
C101	87-010-178-089		C-CAP,S 1000P-50 B
C102	87-010-178-089		C-CAP,S 1000P-50 B
C103	87-010-197-089		C-CAP,S 0.01-25 B<GS352>
C104	87-010-197-089		C-CAP,S 0.01-25 B<GS352>
C103	87-010-213-089		C-CAP,S 0.015-50 B<EXCEPT GS352>
C104	87-010-213-089		C-CAP,S 0.015-50 B<EXCEPT GS352>
C105	87-010-501-049		E/CAP GAS 47-4
C106	87-010-501-049		E/CAP GAS 47-4
C107	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT PS251>
C107	87-010-195-089		C-CAP,S 0.068-25F<PS251>
C108	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT PS251>
C108	87-010-195-089		C-CAP,S 0.068-25F<PS251>
C109	87-010-805-089		C-CAP,S 1-16F
C110	87-010-805-089		C-CAP,S 1-16F
C111	87-010-503-049		CAP,E 220-4 GAS
C112	87-010-503-049		CAP,E 220-4 GAS
C113	87-010-502-049		CAP ELECT GAS 100/4
C114	87-010-503-089		CAP,E 220-4 GAS
C115	87-010-196-089		C-CAP,S 0.1-25 F
C116	87-010-196-089		C-CAP,S 0.1-25 F
C117	87-010-425-089		C-CAP,0.22-25F
C118	87-010-805-089		C-CAP,S 1-16F
C119	87-010-178-089		C-CAP,1000P-50 B
C120	87-010-180-089		C-CAP,S 1500P-50 B
C121	87-010-180-089		C-CAP,S 1500P-50 B
C122	87-010-197-089		C-CAP,S 0.01-25 B
C123	87-010-178-089		C-CAP,S 1000P-50 B<EXCEPT GS252>
C124	87-010-178-089		C-CAP,S 1000P-50 B<EXCEPT GS252>
C127	87-010-303-049		C-CAP,330P-50 CH<GS252>
C128	87-012-157-089		C-CAP,S 330P-50 CH<EXCEPT GS352>
C131	87-010-193-089		C-CAP,S 0.033-25 F<GS352>
C132	87-010-193-089		C-CAP,S 0.033-25 F<GS352>
C133	87-010-186-089		C-CAP,S 4700P-50 B<GS352>
C134	87-010-186-089		C-CAP,S 4700P-50 B<GS352>
C135	87-010-197-089		C-CAP,S 0.01-25 B<GS352>
C136	87-010-197-089		C-CAP,S 0.01-25 B<GS352>
C137	87-010-193-089		C-CAP,S 0.033-25 F<GS352>
C138	87-010-193-089		C-CAP,S 0.033-25 F<GS352>
C139	87-010-196-089		C-CAP,S 0.1-25 F<GS352>
C140	87-010-196-089		C-CAP,S 0.1-25 F<GS352>
C141	87-016-492-089		C-CAP,S 0.33-16 FZ<GS352>
C142	87-016-492-089		C-CAP,S 0.33-16 FZ<GS352>
C143	87-016-492-089		C-CAP,S 0.33-16 FZ<GS352>
C143	87-012-141-089		C-CAP,S 0.22-16F<GS252>
C143	87-010-805-089		C-CAP,S 1-16F<PS251>
C144	87-016-492-089		C-CAP,S 0.33-16 FZ<GS352>
C144	87-012-141-089		C-CAP,S 0.22-16F<GS252>
C144	87-010-805-089		C-CAP,S 1-16F<PS251>
C145	87-010-501-049		E/CAP GAS 47-4<GS352>
C145	87-010-502-049		CAP ELEC GAS 100/4<GS252>
C151	87-010-805-089		C-CAP,S 1-16F<EXCEPT YJ,PS251>
C152	87-010-501-049		E/CAP GAS 47-4<EXCEPT YJ,PS251>
C153	87-010-805-089		C-CAP,S 1-16F<EXCEPT YJ,PS251>
JK101	87-099-816-010		JACK,3.5 ST
JK102	87-099-375-019		JACK,DC 3.8
R115	87-022-343-089		C-RES,S 820-1/10W F<GS352>
R116	87-022-343-089		C-RES,S 820-1/10W F<GS352>
R117	87-022-344-089		C-RES,S 1K-1/10W F<GS352>
R118	87-022-344-089		C-RES,S 1K-1/10W F<GS352>
R126	87-022-037-089		C-RES,M M/F0.68
S101	87-036-360-019		SW,SL 2-2-2
S102	87-036-304-089		C-SW,SL 1-1-2<GS352>
S103	87-036-145-019		C-SW,SLIDE 1-1-3<EXCEPT YJ,PS251>
S104	87-036-110-019		SW,PUSH SPPB 62
SFR101	87-024-050-019		SFR 1K
TH101	87-026-256-090		THMS,HT-100
VR101	87-024-555-019		VOL 20KAX2 DIA 14
LED C.B<GS352>			
LED101	87-017-827-070		C-LED,SEC 1201C RED
LED102	87-017-829-070		C-LED,SEC 1901C ORN
LED103	87-017-828-070		C-LED,SEC 1401C GRN
GEQ C.B<GS352>			
	83-HRG-605-019		G-EQ ASSY (SB)
HEAD FLEX C.B			
PH1	87-046-418-019		HEAD ASSY,PH
S1	87-036-357-019		SW,SL 2-2-2(NC)
MSP C.B<GS252>			
C201	87-010-197-089		C-CAP,S 0.01-25 B
C202	87-010-197-089		C-CAP,S 0.01-25 B
C203	87-012-141-089		C-CAP,S 0.22-16 F
C204	87-012-141-089		C-CAP,S 0.22-16 F
C205	87-010-805-089		C-CAP,S 1-16 G
C206	87-010-805-089		C-CAP,S 1-16 F
C207	87-010-198-089		C-CAP,S 0.022-25B
C208	87-010-198-089		C-CAP,S 0.022-25B
C209	87-010-195-089		C-CAP,S 0.068-25 F
C210	87-010-195-089		C-CAP,S 0.068-25 F
C211	87-010-188-089		C-CAP,S 6800P-50 B
C212	87-010-188-089		C-CAP,S 6800P-50 B
C213	87-015-969-019		CAP,E 10-6.3 5L
C251	87-010-805-089		C-CAP,S 1-16F
C252	87-010-196-089		C-CAP,S 0.1-25F
LED301	87-017-828-070		C-LED,SEC 1401C GRN
LED302	87-017-829-070		C-LED,SEC 1901C ORN
LED303	87-017-827-070		C-LED,SEC 1201C RED
S201	87-036-146-089		C-SW SLIDE 1-1-4
S-BASS C.B<PS251>			
C201	87-010-196-089		C-CAP,S 0.01-25 F
C202	87-010-196-089		C-CAP,S 0.01-25 F
C201	87-036-244-089		C-SW,SLIDE 1-2-2(NC)

ADJUSTMENT

A MAIN C.B



<TAPE PLAYER SECTION>

1. Tape Speed Adjustment.
   Settings: •Test tape : TTA-100
   •Test point : PHONES JACK (JK101)
   •Adjustment location : SFR101
   Method: Play back the test tape, adjust for 3015Hz at FWD and less than 50Hz at REV.

2. Dolby Level Check (HS-GS352 only)
   Settings: •Test tape : TTA-200(TTA-161,TTC-130)
   •Test point : TP1 (Rch), TP2(Lch)
   •Dolby sw : OFF
   •Tape select : NORM
   •Volume : MIN
   •Direction : FORWARD
   Method: Connect an electrolytic capacitor (10μ/16V) to measured equipment and TP1(2),check the voltage for 100±1dB.

3. Motor load adjustment.
   Perform the STOP→PLAY and REVERSE operations (or PAUSE ON→OFF) after the motor is replaced. When the tape starts running smooth, this adjustment is not necessary. If wow is conspicuous at the begining of the tape-run, perform this adjustment following the procedure below.
   1) Solder only medium resistor pattern (B) of the MOTOR AND GOVERNOR MATCHING ADJ. resistor group.
   2) Set the tape speed (using speed adjustment SFR).
   3) Restrict the motor rotation by hand (or turn PAUSE ON).
   4) Remove your hand and listen to the begining of the tape-run.
   5) When the rise of tape is running is smooth, no more adjustment is necessary.
      If wow continues for 1 to 2 seconds at the rise time,reduce the combined resistance according to procedure 6 and check that the tape starts running smooth.
   6) Solder the resistor pattern according to the table below.

Pattern	(Procedure 1 above)	Step(1)	Step(2)	Step(3)
10Ω(C)	Open	Solder	Solder	Open
5.6Ω(B)	Solder	Open	Solder	Open
3.3Ω(A)	Open	Open	Open	Solder

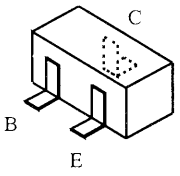
   7) Finally re-check the tape speed.
      Caution : Cool the pattern down to normal temperature after soldering .If the pattern remains heated, the governor circuit does not operate normally.

PRACTICAL SERVICE FIGURE

<TAPE PLAYER SECTION>

Tape speed:	3015Hz ± 60Hz
Wow & flutter:	Less than 0.52% (RMS)
Pinch roller pressure:	150 ~ 180g (FWD)
	135 ~ 165g (REV)
Take-up torque:	25 ~ 45g-cm (FWD, REV)
F.F torque:	70 ~ 140g-cm
Rew torque:	70 ~ 140g-cm
Back tension:	1 ~ 4g-cm (FWD)
	1 ~ 4g-cm (REV)
S/N ratio:	More than 47dB (DC)
Distortion:	Less than 2.5% (DC)
Noise level:	Less than 3.0mV
	(Vol MAX, DC)
Frequency response:	63Hz ± 5dB ~ 8kHz ± 4dB
	(NORMAL)

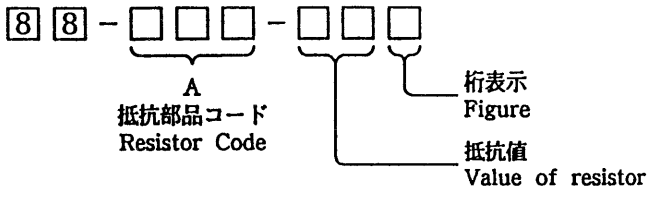
TRANSISTORS ILLUSTRATION



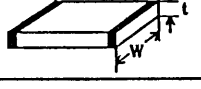
RN1411
2SC2712GR

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

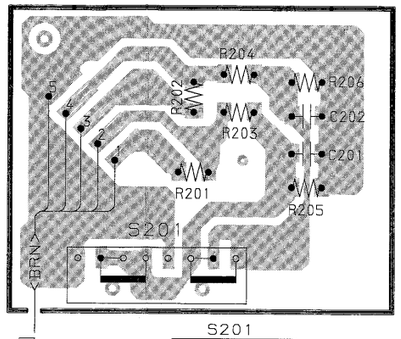


チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法 (mm) Form/外形	L	W	t	Resistor Code : A 抵抗コード : A
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3126	±5%	CJ		3.2	1.6	0.5 ~0.7	128

3216

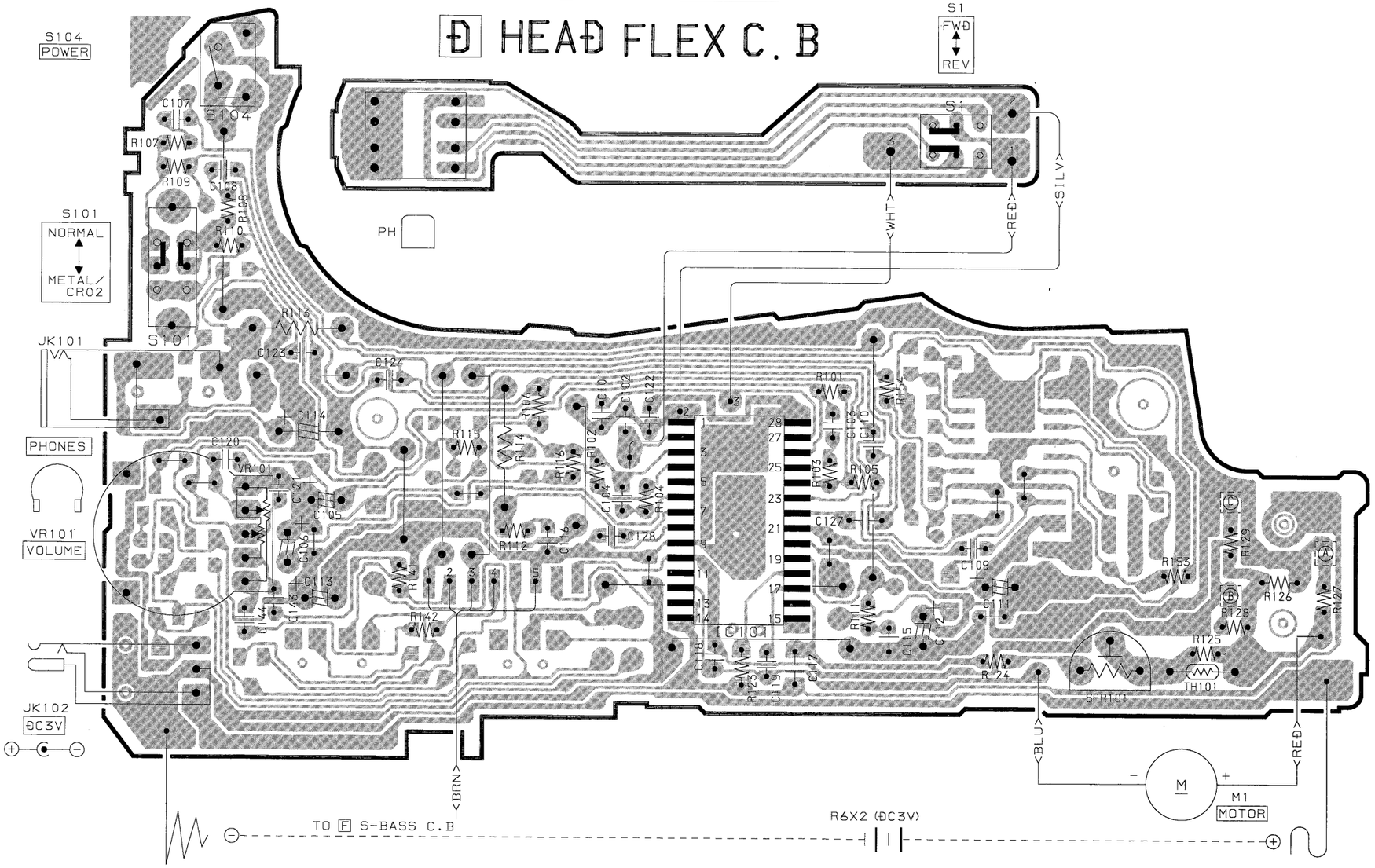
F S-BASS C.B

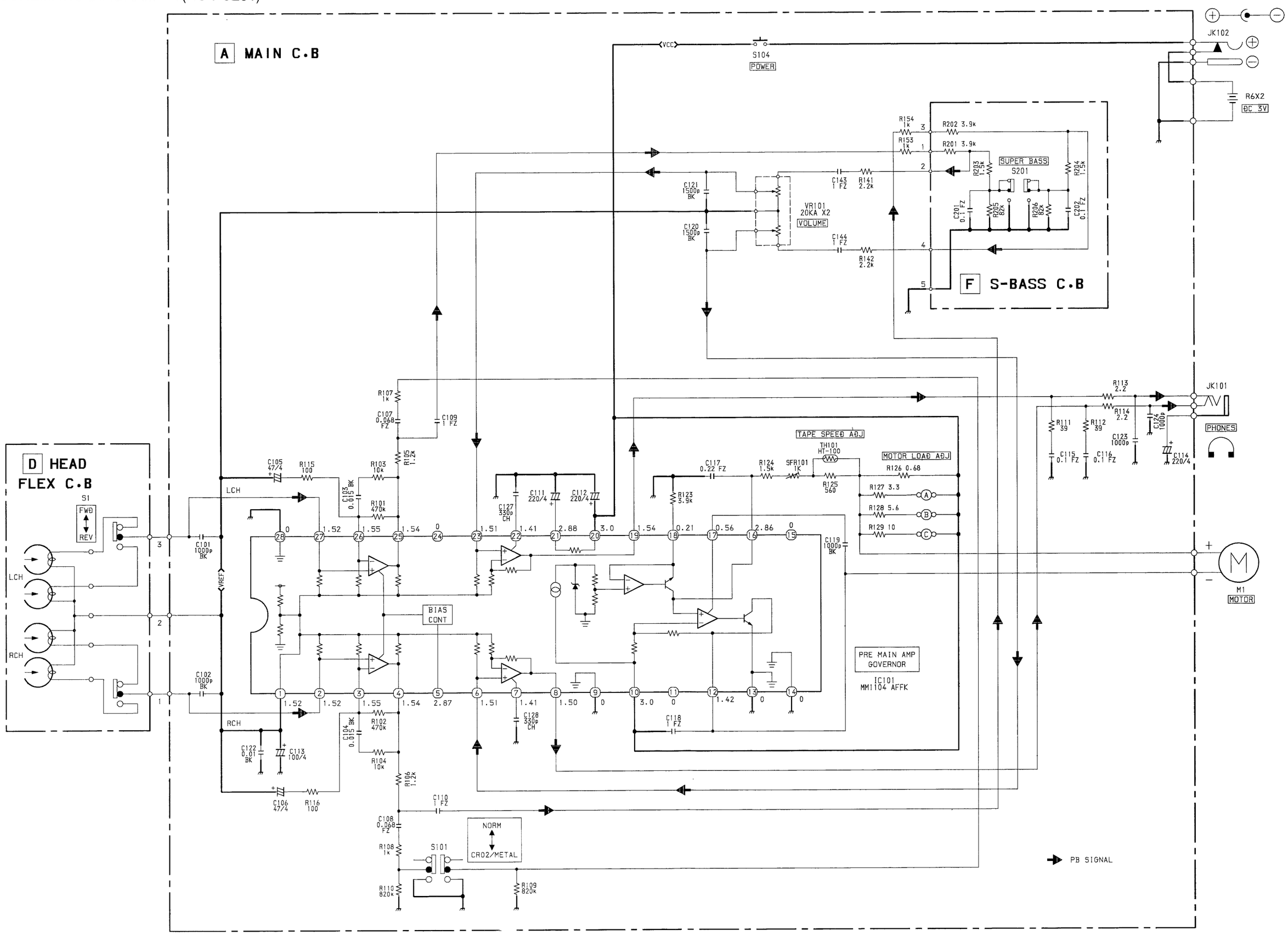


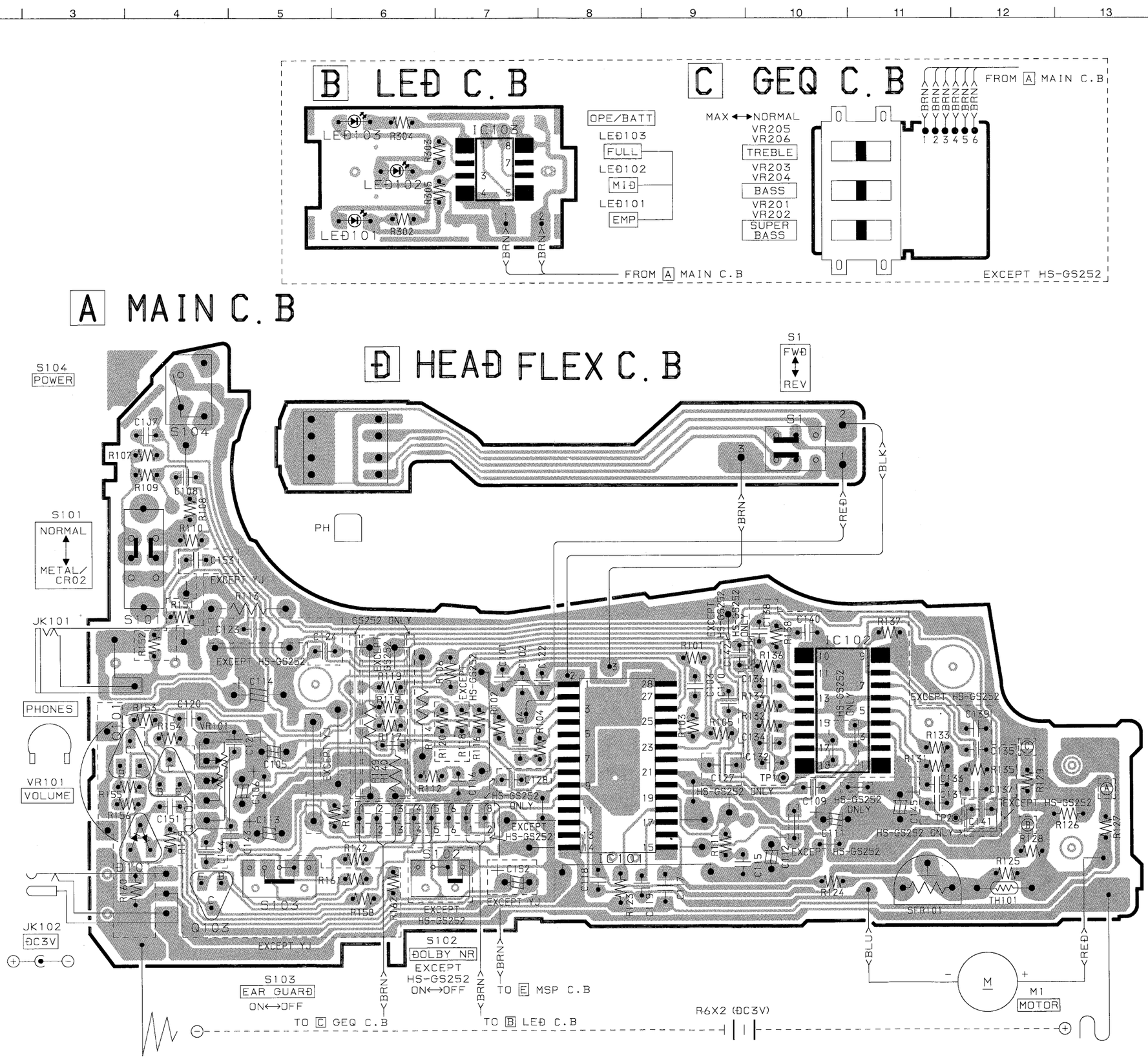
FROM A MAIN C.B — S201 SUPER BASS

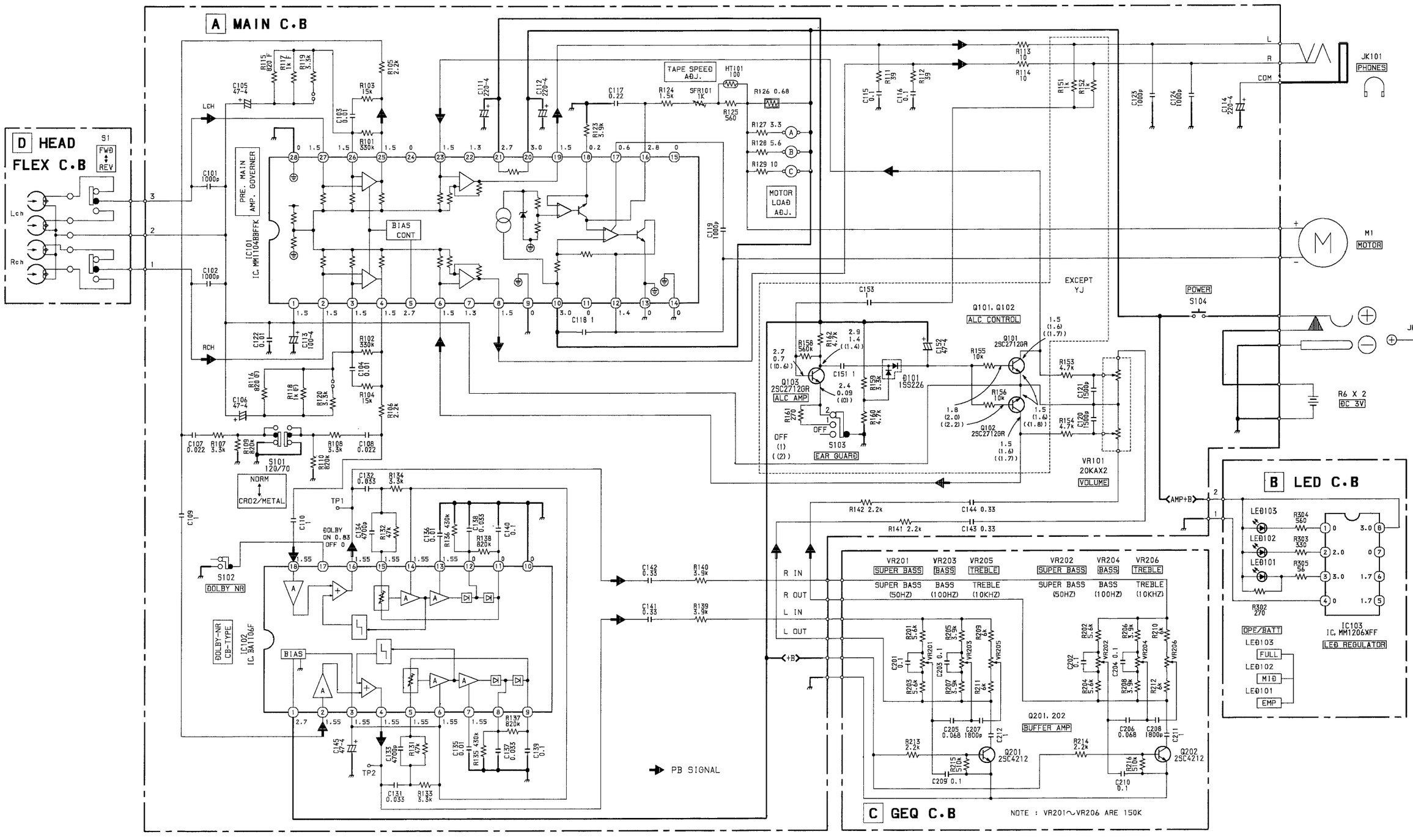
A MAIN C.B

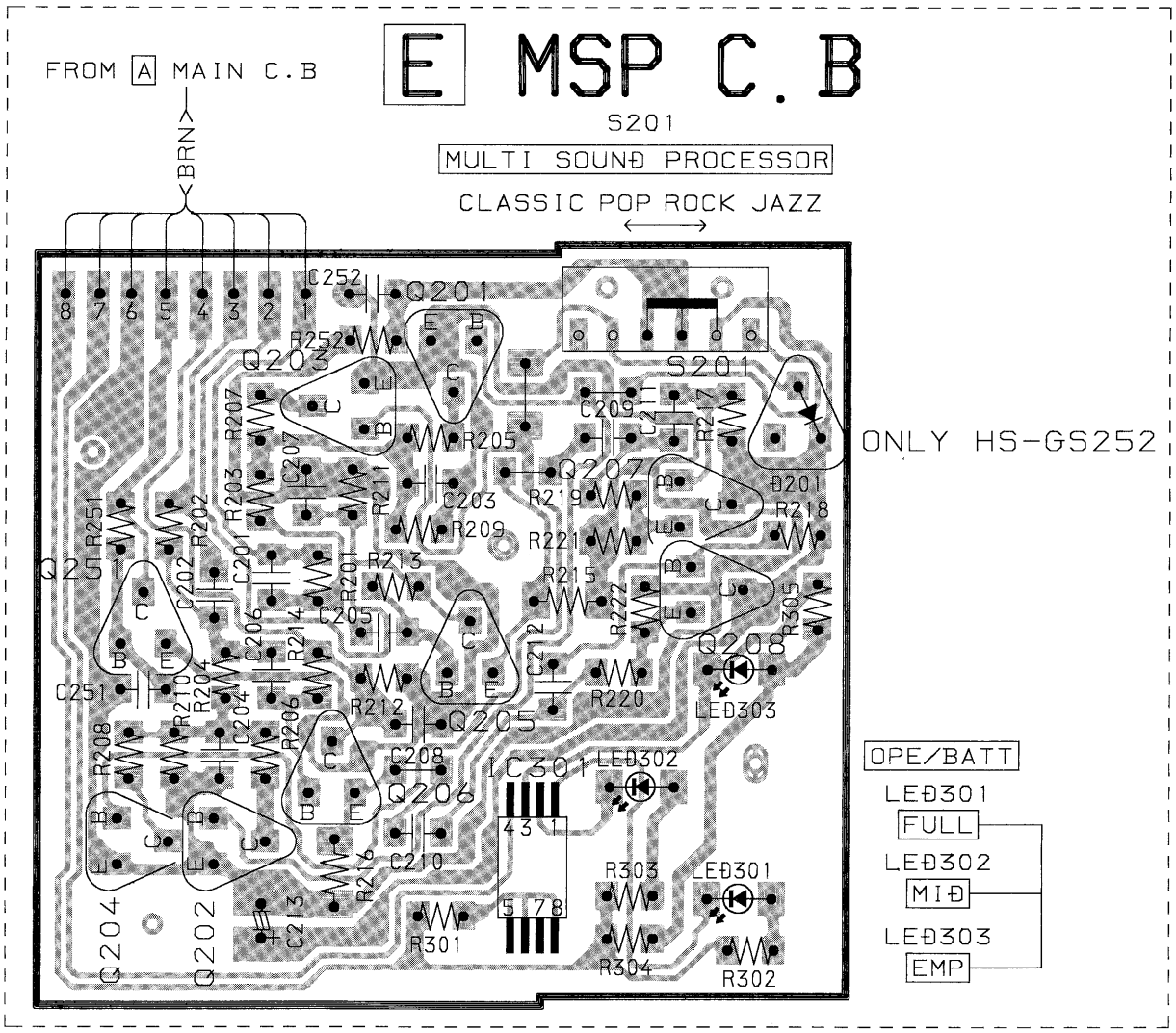
D HEAD FLEX C.B




A MAIN C.B
D HEAD FLEX C.B
F S-BASS C.B
S104 POWER
JK102
R6X2 DC 3V
JK101
PHONES
M1 MOTOR
S1 FWD REV
LCH
RCH
VR101 20KA X2 VOLUME
SUPER BASS S201
R154 1k
R153 1k
R202 3.9k
R201 3.9k
R203 1.5k
R204 1.5k
R205 82k
R206 82k
C201 0.1 FZ
C202 0.1 FZ
C121 1500p BK
C120 1500p BK
C143 1 FZ
C144 1 FZ
R141 2.2k
R142 2.2k
VREF
BIAS CONT
TAPE SPEED ADJ
TH101 HT-100
MOTOR LOAD ADJ
SFR101 1K
R124 1.5k
R125 560
R126 0.68
R127 3.3
R128 5.6
R129 10
R123 3.9k
C117 0.22 FZ
C111 220/4
C112 220/4
C127 330p CH
C128 330p CH
C118 1 FZ
C119 1000p BK
PRE MAIN AMP GOVERNOR
IC101 MM1104 AFFK
R107 1k
C107 0.068 FZ
C109 1 FZ
R105 1.2k
C105 47/4
R115 100
R103 10k
C103 0.015 BK
R101 470k
C101 1000p BK
C102 1000p BK
C122 0.01 BK
C113 100/4
C104 0.015 BK
R102 470k
R104 10k
R106 1.2k
C106 47/4
R116 100
C110 1 FZ
C108 0.068 FZ
R108 1k
S101 NORM CRO2/METAL
R110 820k
R109 820k
R113 2.2
R114 2.2
C124 1000p
R111 39
R112 39
C123 1000p
C115 0.1 FZ
C116 0.1 FZ
C114 220/4
PB SIGNAL


B LEÐ C.B
LEÐ103
LEÐ102
LEÐ101
R304
R303
R305
R302
IC103
OPE/BATT
LEÐ103
FULL
LEÐ102
MIÐ
LEÐ101
EMP
FROM A MAIN C.B
C GEQ C.B
MAX ↔ NORMAL
VR205
VR206
TREBLE
VR203
VR204
BASS
VR201
VR202
SUPER BASS
FROM A MAIN C.B
BRN
1 2 3 4 5 6
EXCEPT HS-GS252
A MAIN C.B
Ð HEAÐ FLEX C.B
S1
FWÐ
REV
BRN
REÐ
BLK
S104
POWER
S101
NORMAL
METAL/CR02
PH
JK101
PHONES
VR101
VOLUME
JK102
ÐC3V
S103
EAR GUARÐ
ON↔OFF
S102
ÐOLBY NR
EXCEPT HS-GS252
ON↔OFF
TO E MSP C.B
TO C GEQ C.B
TO B LEÐ C.B
R6X2 (ÐC3V)
IC102
IC101
TP1
TP2
SFR101
TH101
BLU
REÐ
M
M1
MOTOR
EXCEPT HS-GS252
HS-GS252 ONLY
EXCEPT YJ

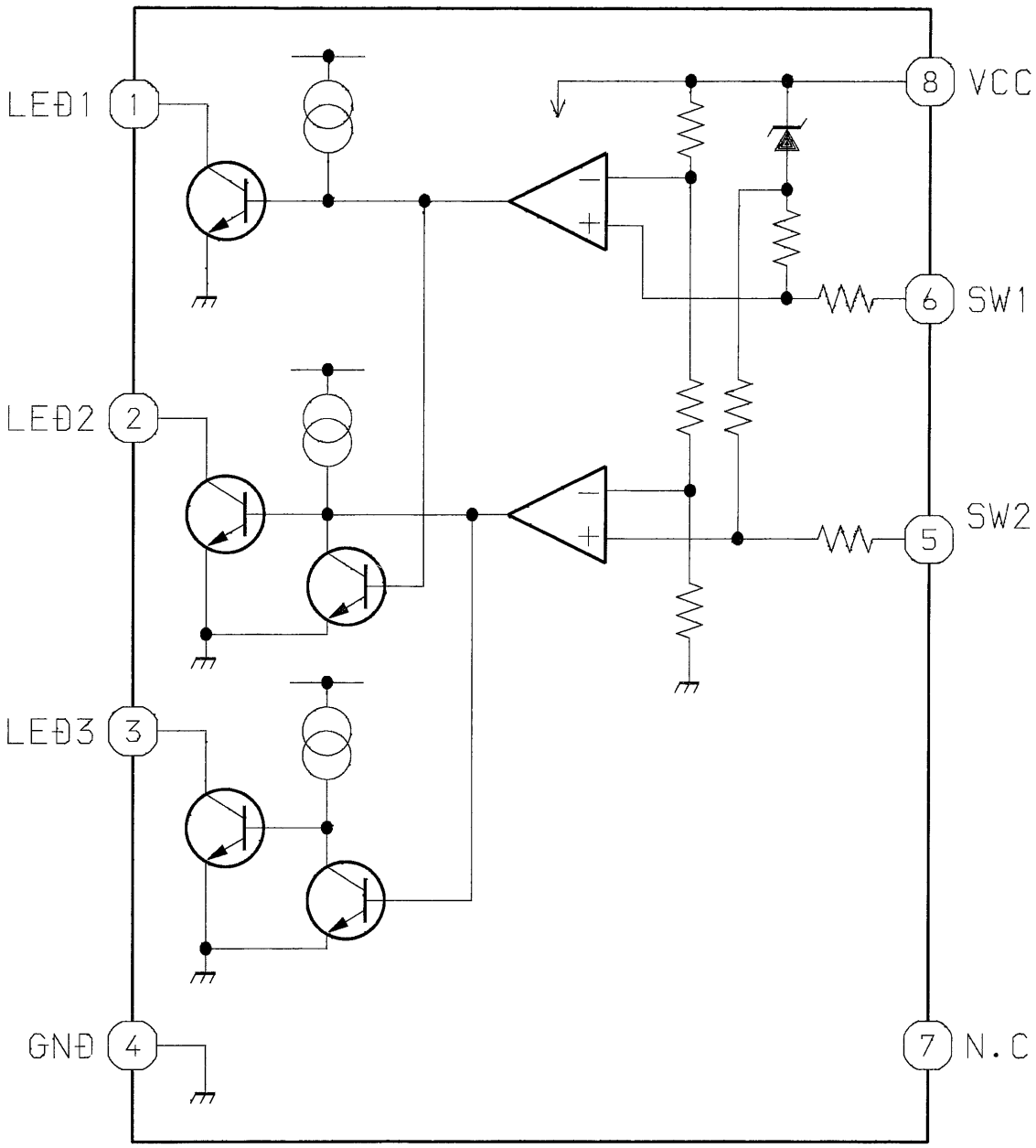

A MAIN C.B
D HEAD FLEX C.B
S1
FWD
REV
Lch
Rch
PRE. MAIN AMP. GOVERNER
IC101 IC, MM1104BBFFK
BIAS CONT
TAPE SPEED ADJ.
HT101 100
MOTOR LOAD ADJ.
R127 3.3
R128 5.6
R129 10
R126 0.68
R125 560
L
R
COM
JK101
PHONES
M1
MOTOR
POWER
S104
JK102
R6 X 2
DC 3V
EXCEPT YJ
Q101, Q102
ALC CONTROL
Q103 2SC2712GR
ALC AMP
Q101 2SC2712GR
Q102 2SC2712GR
Q101 1SS226
EAR GUARD
S103
VR101 20KAX2
VOLUME
B LED C.B
LED103
LED102
LED101
R304 560
R303 330
R305 56
R302 270
IC103 IC, MM1206XFF
LED REGULATOR
OPE/BATT
LED103 FULL
LED102 MID
LED101 EMP
AMP+B
S101 120/70
NORM
CRO2/METAL
S102
DOLBY NR
DOLBY ON 0.83 OFF 0
DOLBY-NR CB--TYPE
IC102 IC, BA1106F
BIAS
TP1
TP2
PB SIGNAL
R IN
R OUT
L IN
L OUT
+B
VR201 SUPER BASS
VR203 BASS
VR205 TREBLE
VR202 SUPER BASS
VR204 BASS
VR206 TREBLE
SUPER BASS (50HZ)
BASS (100HZ)
TREBLE (10KHZ)
Q201, 202
BUFFER AMP
Q201 2SC4212
Q202 2SC4212
C GEQ C.B
NOTE : VR201~VR206 ARE 150K

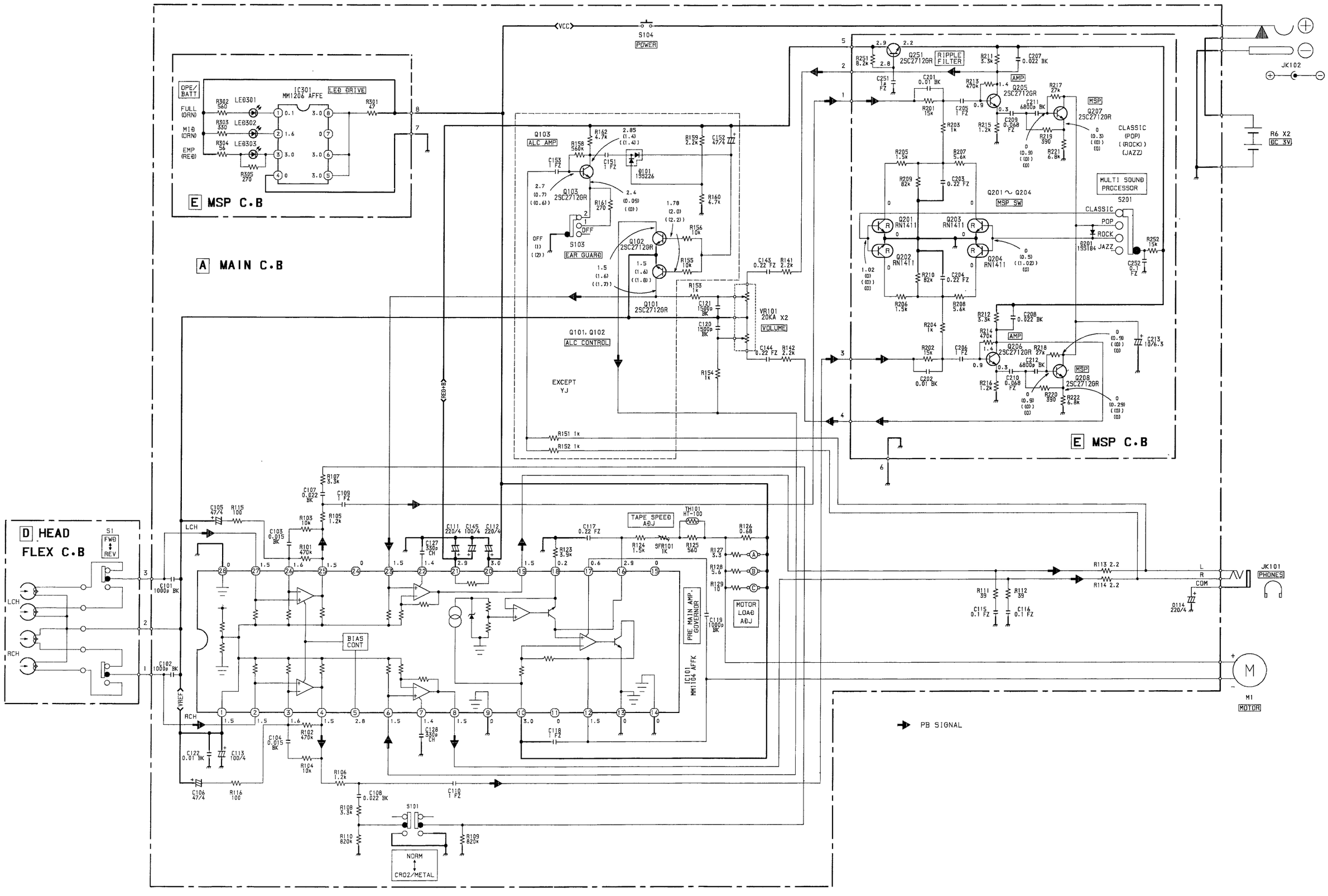

E MSP C.B
FROM A MAIN C.B
BRN
S201
MULTI SOUND PROCESSOR
CLASSIC POP ROCK JAZZ
ONLY HS-GS252
OPE/BATT
LED301
FULL
LED302
MID
LED303
EMP

IC BLOCK DIAGRAM

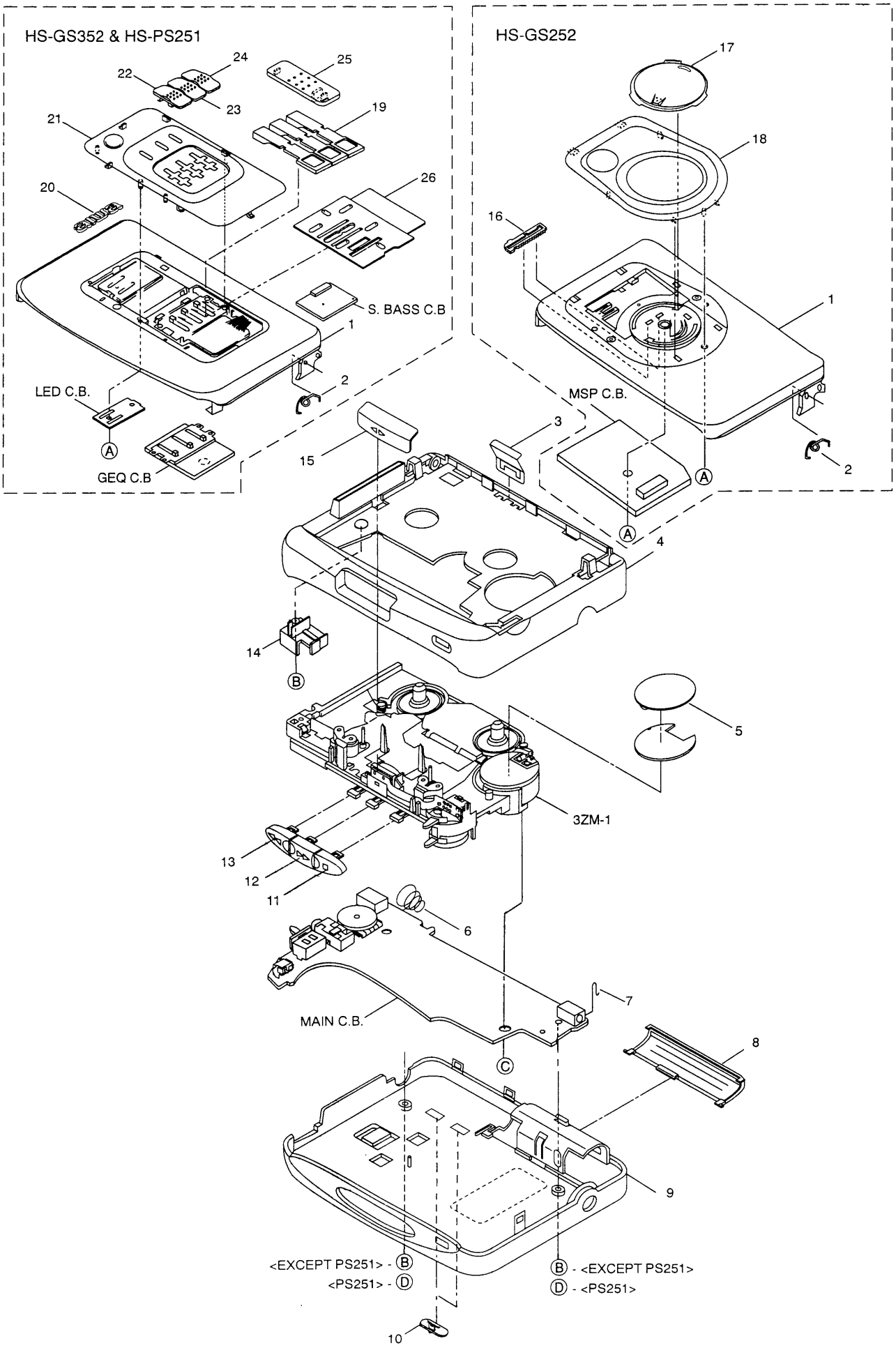
IC, MM1206XFF

IC, MM1206AFFE




E MSP C.B
A MAIN C.B
D HEAD FLEX C.B
IC301 MM1206 AFFE
LED DRIVE
S104 POWER
S103 EAR GUARD
Q101, Q102 ALC CONTROL
EXCEPT YJ
VR101 20KA X2 VOLUME
Q251 2SC2712GR RIPPLE FILTER
Q205 2SC2712GR AMP
Q207 2SC2712GR MSP
Q206 2SC2712GR AMP
Q208 2SC2712GR MSP
Q201 ~ Q204 MSP SW
MULTI SOUND PROCESSOR S201
CLASSIC (POP) (ROCK) (JAZZ)
TAPE SPEED ADJ
MOTOR LOAD ADJ
PRE MAIN AMP. GOVERNOR
IC101 MM1104 AFFK
BIAS CONT
S101 NORM CRO2/METAL
JK102 R6 X2 DC 3V
JK101 PHONES
M1 MOTOR
PB SIGNAL

MECHANICAL EXPLODED VIEW 1/1

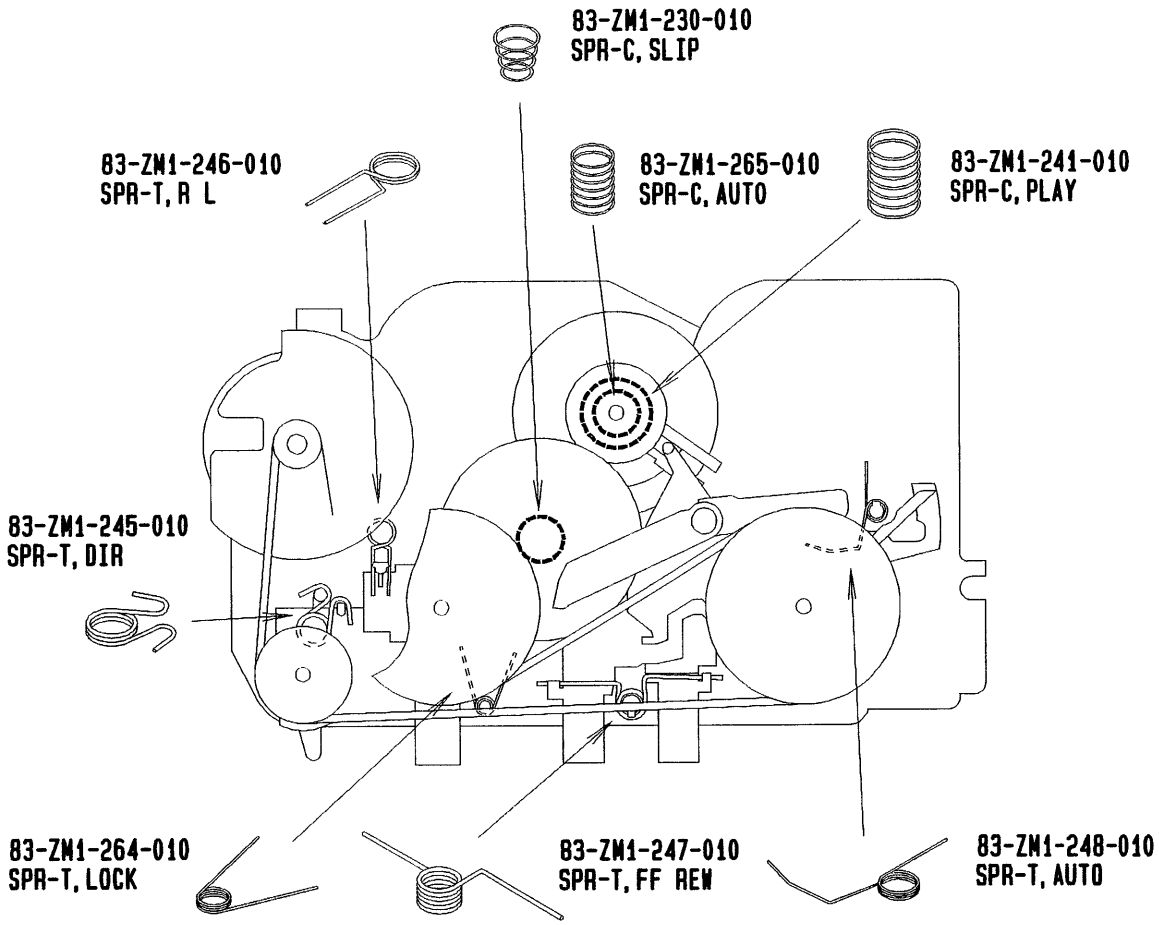


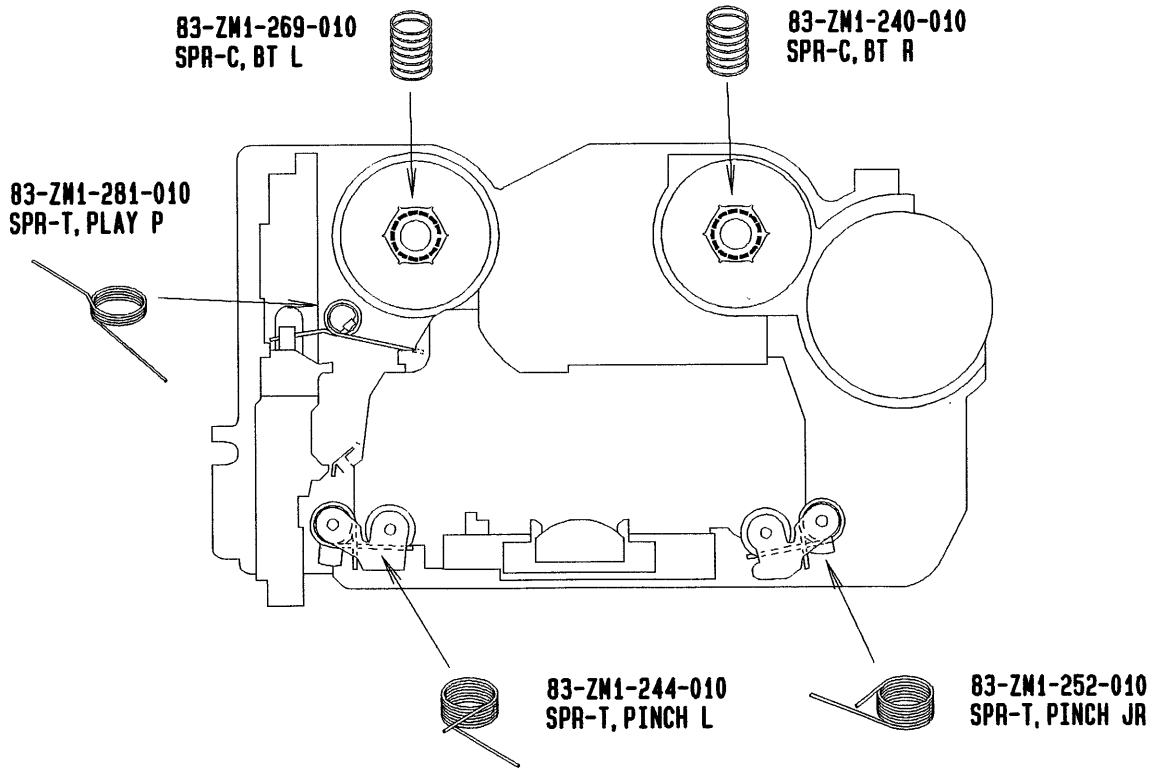
MECHANICAL PARTS LIST 1/1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

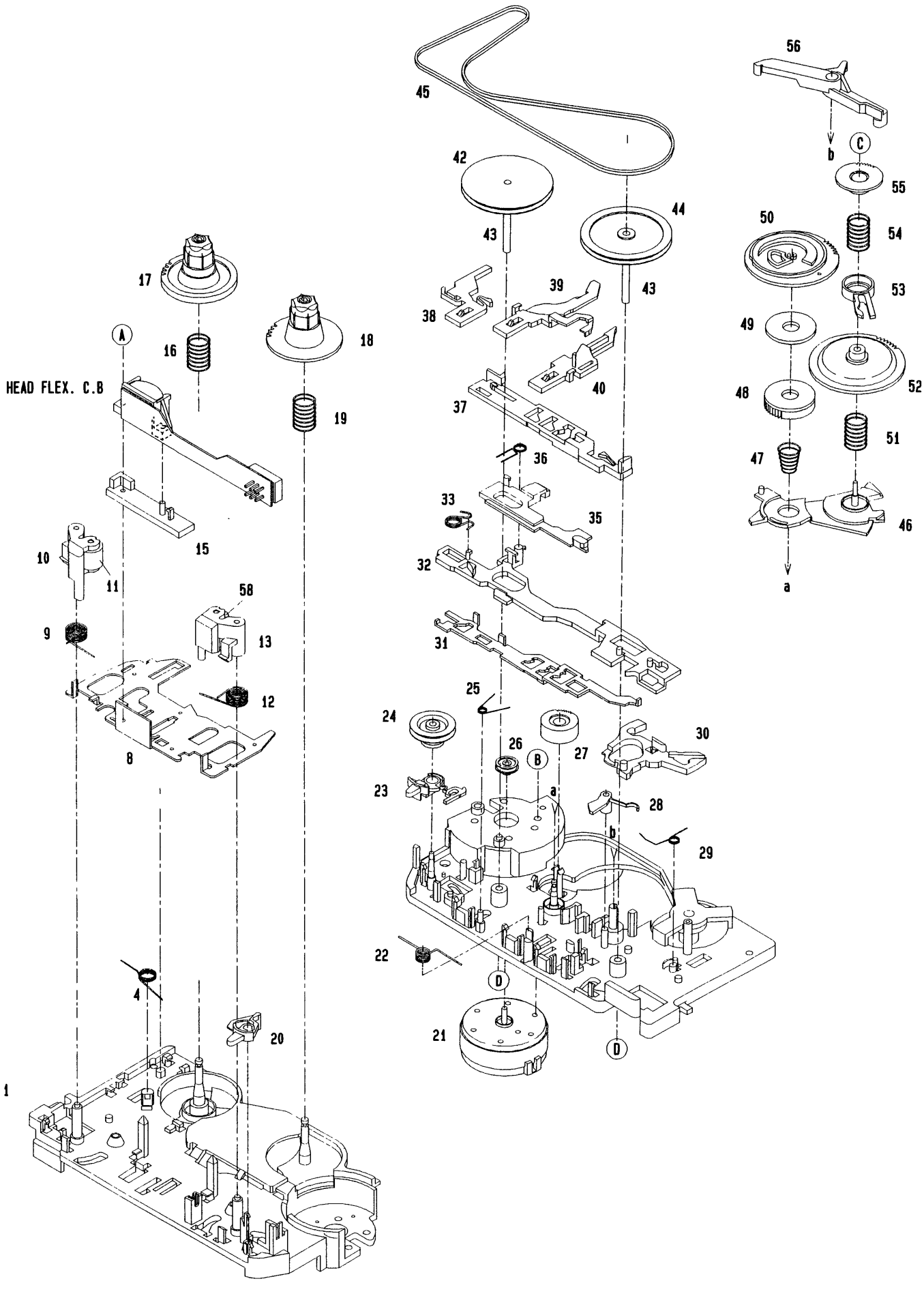
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-HG8-011-019		LID,CASS G<GS252 Y1G>
1	85-HG8-009-019		LID,CASS EG<GS252 Y>
1	85-HG8-001-019		LID,CASS<GS252 YJ>
1	85-HG7-001-019		LID,CASS EG<GS352 YJ>
1	85-HG7-019-019		LID,CASS EG<GS352 Y>
1	85-HK8-001-019		LID,CASS<PS251>
2	85-HG7-203-019		T-SPR,CASS
3	81-HK9-208-110		SPR-P,CASS A
4	85-HG7-003-019		FRAME
5	84-HJ6-216-019		LBL,MOTOR 3ZM-1
6	85-HG7-207-019		BATT-CONT(-)
7	85-HG7-206-019		BATT-CONT(+)
8	85-HG7-005-019		LID,BATT<Y,YJ>
8	85-HG8-013-019		LID,BATT<GS252 Y1G>
9	85-HG7-018-019		CAB,REAR EG<GS352 Y>
9	85-HG7-004-019		CAB,REAR<GS352 YJ>
9	85-HG8-007-019		CAB,REAR EG<GS252 Y>
9	85-HG8-008-019		CAB,REAR<GS252 YJ,PS251>
9	85-HG8-012-019		CAB,REAR(G)<GS252 Y1G>
10	85-HG7-014-019		KNOB,SLR<EXCEPT GS252 YJ,PS251>
11	85-HG7-011-019		BTN,STOP
12	85-HG7-012-019		BTN,FF
13	85-HG7-013-019		BTN,REW
14	85-HG7-208-019		HLDR,JACK
15	85-HG7-010-019		BTN,PLAY
16	85-HG8-201-019		GEAR,MSP<GS252>
17	85-HG8-003-019		KNOB,MSP<GS252>
18	85-HG8-002-019		PANEL,CASS<GS252>
19	85-HG7-006-019		INDICATOR<GS352>
20	87-054-085-019		BADGE AIWA 22.5 MLD<GS352>
21	85-HG7-002-019		PANEL<GS352>
21	85-HK8-002-019		PANEL,CASS<PS251>
22	85-HG7-009-019		KNOB,3G L<GS352>
23	85-HG7-008-019		KNOB,3G C<GS352>
24	85-HG7-007-019		KNOB,3G R<GS352>
25	85-HK8-003-019		KNOB,SL SB<PS251>
26	85-HK8-201-019		PLATE,IND<PS251>
A	87-067-385-019		SCREW VT 1.4X2.5 HL
B	87-067-430-019		VT1.4-5(BLK)HL
C	87-266-529-319		V(3)+1.7-4NIC
D	87-067-405-019		VT(C)1.4-6HL<PS251>

SPRING APPLICATION POSITION





TAPE MECHANISM EXPLODED VIEW 1/1



TAPE MECHANISM PARTS LIST 1/1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZM1-201-71K		CHAS,MAIN
4	83-ZM1-281-010		SPR-T,PLAY P
8	83-ZM1-206-219		LVR,BTN PLAY
9	83-ZM1-244-019		SPR-T,PINCH L
10	83-ZM1-220-119		LVR,PINCH L
11	83-ZM1-289-010		PINCH ROL ASSY,L
12	83-ZM1-252-319		SPR-T,PINCH JR
13	83-ZM1-219-119		LVR,PINCH R
15	83-ZM1-286-01K		GUIDE,HEAD
16	83-ZM1-269-119		SPR-C,BT L
17	83-ZM1-235-31K		GEAR,REEL L
18	83-ZM1-234-31K		GEAR,REEL R
19	83-ZM1-240-119		SPR-C,BT R
20	83-ZM1-210-119		BTN DIR
21	87-045-385-019		MOTOR (BCY3B11)
22	83-ZM1-247-119		SPR-T,FF REW
23	83-ZM1-266-219		BTN,MODE CHG
24	83-ZM1-236-01K		PULLEY,BELT
25	83-ZM1-264-019		SPR-T,LOCK
26	83-ZM1-237-21K		PULLEY,MOTOR
27	83-ZM1-233-119		GEAR,R
28	83-ZM1-267-119		LVR,DEF AUTO
29	83-ZM1-248-019		SPR-T,AUTO
30	83-ZM1-211-110		LINK,AUTO
31	83-ZM1-216-419		LVR,LOCK
32	83-ZM1-214-419		LVR,DIR
33	83-ZM1-245-219		SPR-T,DIR
35	83-ZM1-215-119		LVR,FR
36	83-ZM1-246-119		SPR-T,R L
37	83-ZM1-213-11K		LVR,SW
38	83-ZM1-209-219		LVR,BTN STOP
39	83-ZM1-207-119		LVR,BTN FF
40	83-ZM1-208-119		LVR,BTN REW
42	83-ZM1-222-310		FLY-WHL,R
43	83-ZM1-282-010		SHAFT,CAP 2.0 RR
44	83-ZM1-225-310		FLY-WHL,L
45	83-ZM1-259-310		BELT,P
46	83-ZM1-217-219		LVR,PLAY
47	83-ZM1-230-119		SPR-C,SLIP
48	83-ZM1-229-019		GEAR,SLIP
49	83-ZM1-228-119		FELT
50	83-ZM1-227-21K		GEAR,AUTO
51	83-ZM1-241-219		SPR-C,PLAY
52	83-ZM1-231-219		GEAR,PLAY
53	83-ZM1-218-219		LVR,SLIP
54	83-ZM1-265-019		SPR-C,AUTO
55	83-ZM1-232-119		GEAR,FR
56	83-ZM1-273-019		LVR,AUTO 2
58	83-ZM1-255-010		PINCH ROL ASSY
A	87-078-111-019		S-SCRW,V+1.7-6
B	87-078-100-019		S-SCRW,V+1.7-2.5
C	87-078-132-010		PW,1.2-3.5-0.25C-CUT
D	87-078-086-019		SOMA,1.5-3.5-0.3 SLT

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-048-305-019		HP-A170<GS252 YB,GS352 YB>
1	87-048-309-019		HP-24NAN<Y1,Y1G,YJ1>
1	87-048-307-019		HP-A071<PS251 YB,YJ>
2	87-080-045-019		HLDR,BELT
3	85-HG8-901-019		IB,EGFSIC-S <GS252 Y,Y1G>
3	85-HG8-902-019		IB,EX-EGFSIC-S-YJ <GS252 YJ>
3	85-HG7-901-019		IB,EX-EGFASIC-S <GS352 Y>
3	85-HG7-902-019		IB,EX-EGFSIC-S-YJ <GS352 YJ>
3	85-HK8-901-019		IB,EX-EGFS1C<PS251>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH. ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
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